FIG. 1

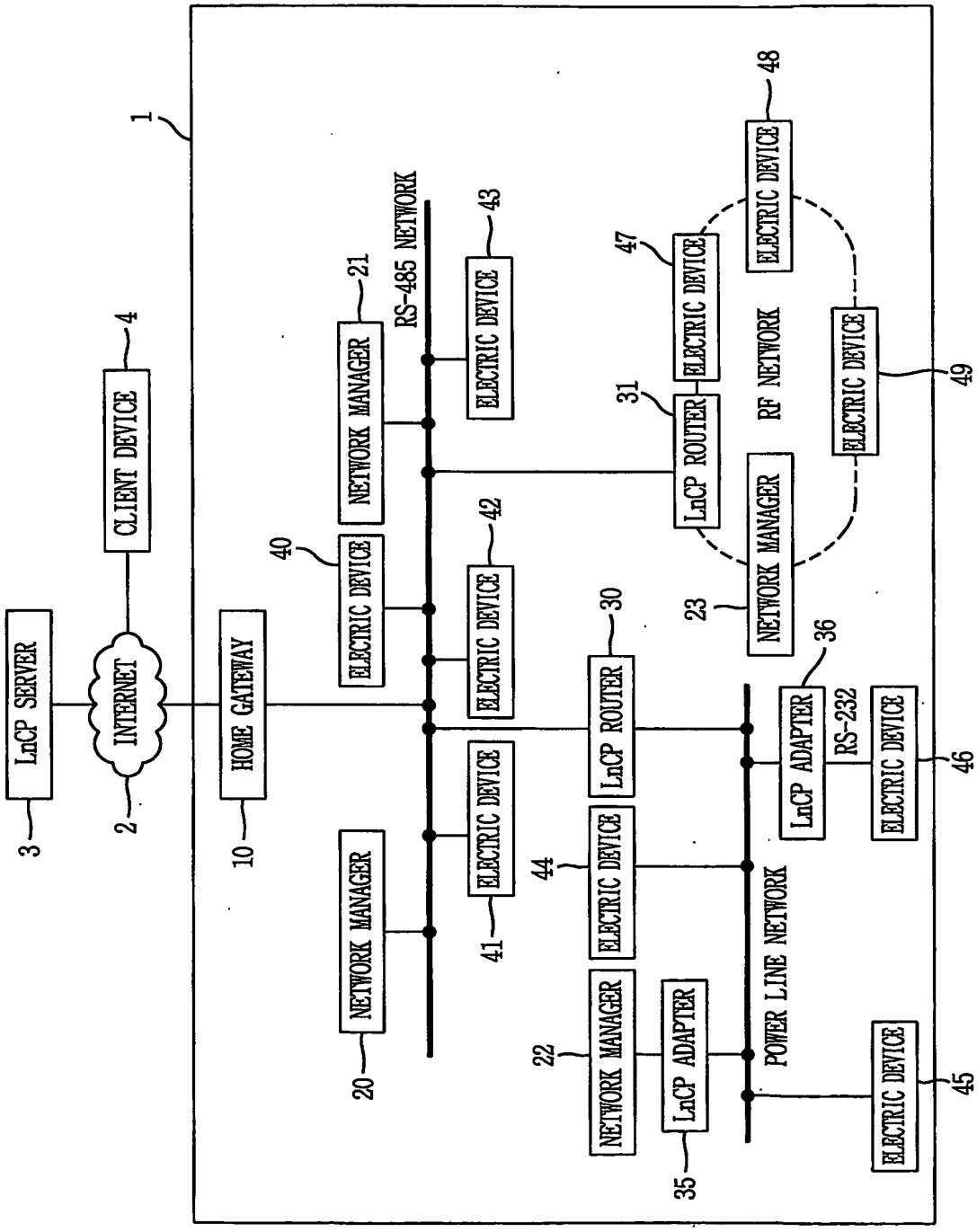
LnCP SERVER
3
INTERNET
2
CLIENT DEVICE
4
1
HOME GATEWAY
10
NETWORK MANAGER
20
RS-485 NETWORK
NETWORK MANAGER
21
ELECTRIC DEVICE
40
ELECTRIC DEVICE
41
ELECTRIC DEVICE
42
ELECTRIC DEVICE
43
LnCP ROUTER
30
NETWORK MANAGER
22
ELECTRIC DEVICE
44
LnCP ADAPTER
35
POWER LINE NETWORK
LnCP ADAPTER
36
RS-232
ELECTRIC DEVICE
46
ELECTRIC DEVICE
45
LnCP ROUTER
31
ELECTRIC DEVICE
47
ELECTRIC DEVICE
48
NETWORK MANAGER
23
RF NETWORK
ELECTRIC DEVICE
49

FIG.2

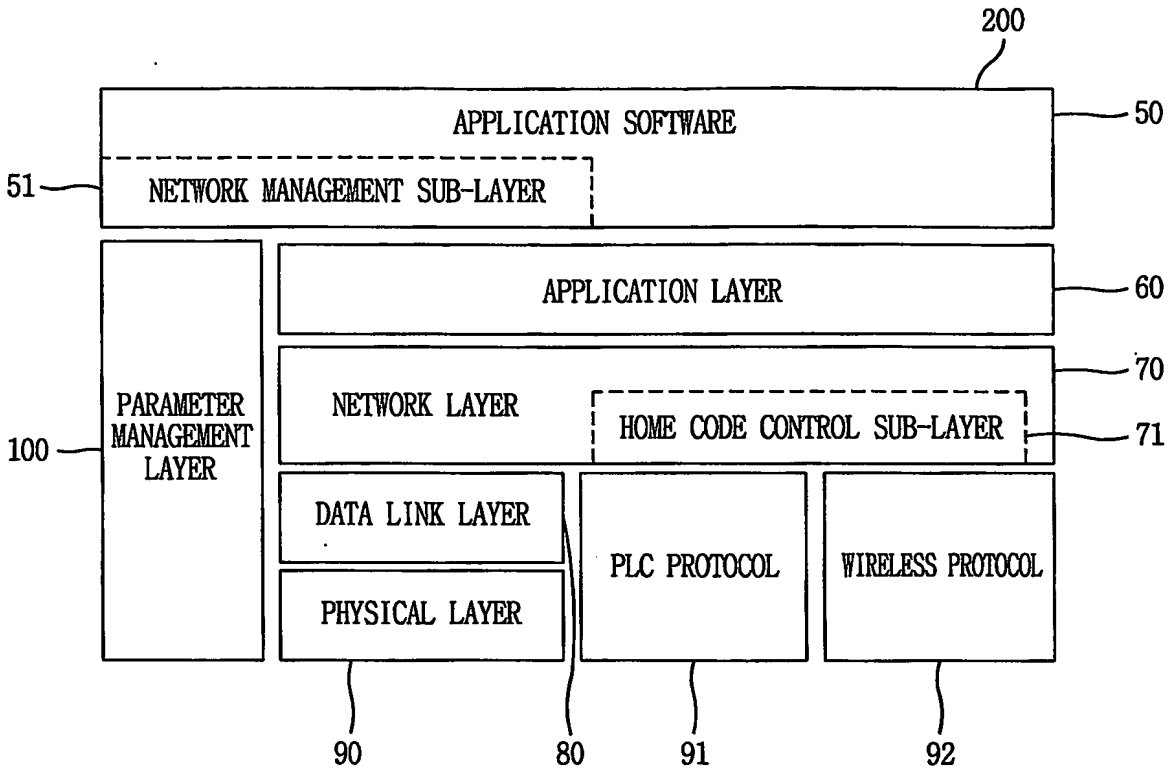
200
APPLICATION SOFTWARE
50
51
NETWORK MANAGEMENT SUB-LAYER
APPLICATION LAYER
60
70
NETWORK LAYER
HOME CODE CONTROL SUB-LAYER
71
100
PARAMETER MANAGEMENT LAYER
DATA LINK LAYER
PHYSICAL LAYER
PLC PROTOCOL
WIRELESS PROTOCOL
90
80
91
92

FIG.3A

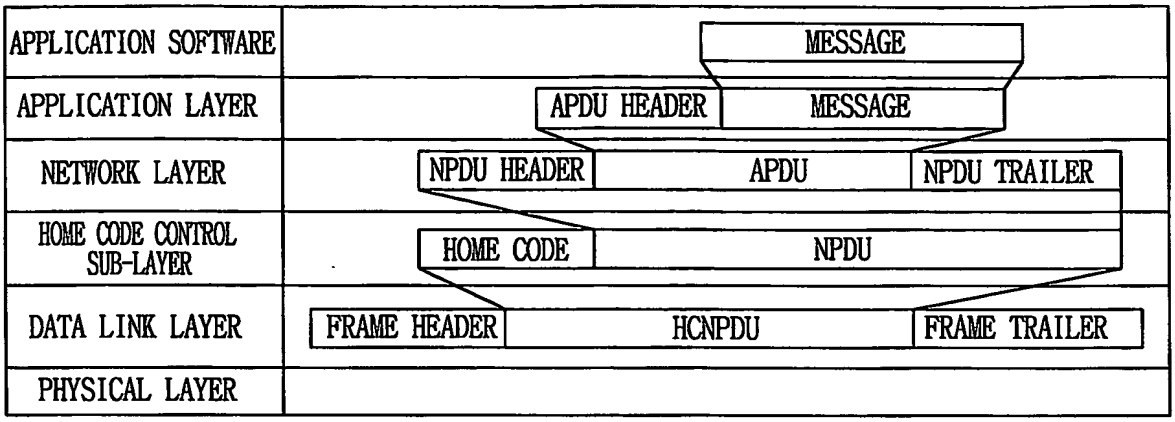
APPLICATION SOFTWARE
MESSAGE
APPLICATION LAYER
APDU HEADER
MESSAGE
NETWORK LAYER
NPDU HEADER
APDU
NPDU TRAILER
HOME CODE CONTROL SUB-LAYER
HOME CODE
NPDU
DATA LINK LAYER
FRAME HEADER
HCNPDU
FRAME TRAILER
PHYSICAL LAYER

FIG.3B

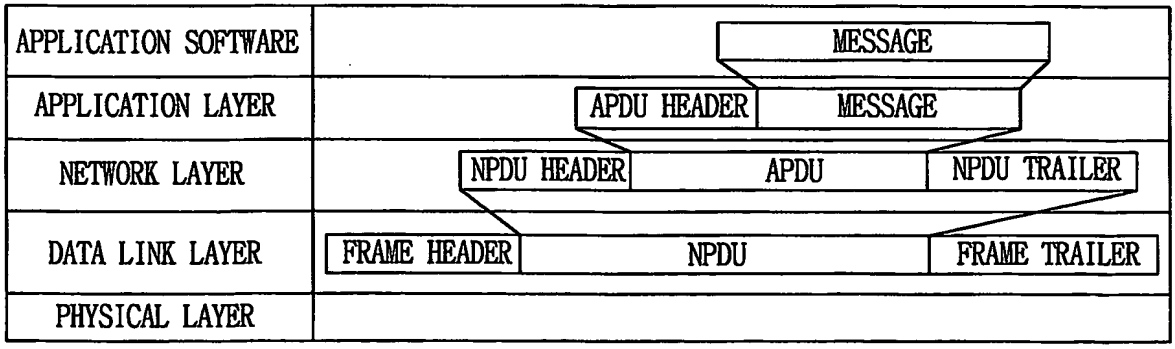
APPLICATION SOFTWARE
MESSAGE
APPLICATION LAYER
APDU HEADER
MESSAGE
NETWORK LAYER
NPDU HEADER
APDU
NPDU TRAILER
DATA LINK LAYER
FRAME HEADER
NPDU
FRAME TRAILER
PHYSICAL LAYER

FIG.4A

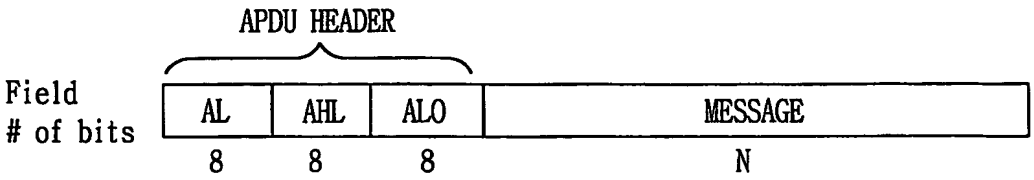

FIG.4B

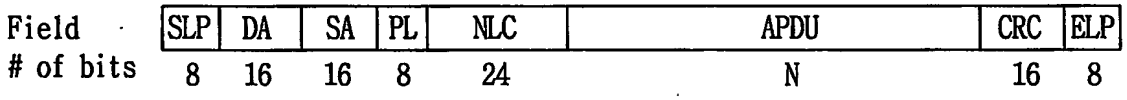

FIG.4C

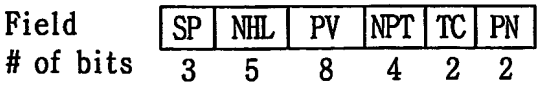

FIG.4D

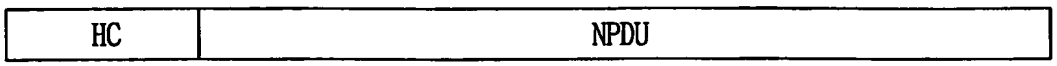

FIG.4E

FIG.4F

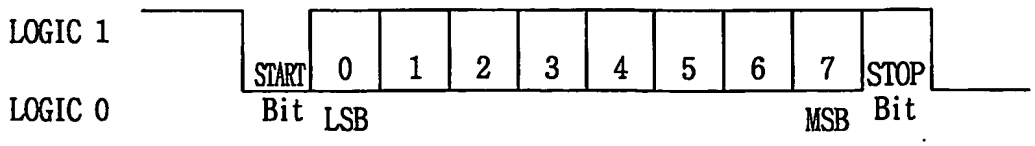

FIG.5A

CC	ARGUMENT 1	ARGUMENT 2	.....

FIG.5B

CC	TOTAL PAGE	CURRENT PAGE	.....

FIG.5C

CC	PAGE NUMBER	DATA SIZE	.....

FIG.6A

CC	ACK	ARGUMENT 1	ARGUMENT 2	.....

FIG.6B

CC	NAK	NAK_CODE

FIG.6C

CC	NAK	NAK_CODE	ERROR_CODE

FIG.7

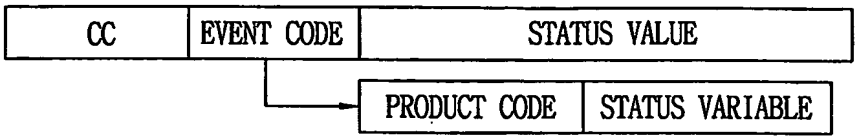

FIG.8A
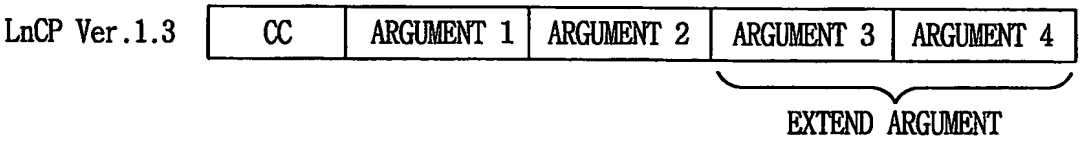
FIG.8B